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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/625,525

07/24/2003

Sang Seok Lee

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EXAMINER

MCNALLY, DANIEL

ART UNIT

PAPER NUMBER

1733

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/625,525	Applicant(s) LEE ET AL.	
	Examiner Daniel McNally	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 14-18 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 14-18 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/12/2007, 7/10/2007</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/12/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al (of record, previously cited) in view of Norton (newly cited).

Satoshi et al. discloses a substrate bonding apparatus for manufacturing a liquid crystal display device comprising a base frame(3); a lower chamber unit (10) mounted to the base frame (paragraph 0013); an upper chamber unit (21) joinable to the lower chamber unit; an upper stage (S1) fixed to the upper chamber unit (21) for securing a first substrate (1b); a lower stage (T1) fixed to the lower chamber unit for securing a second substrate (1a). Satoshi discloses at least one of the upper and lower stages includes: a fixing plate (27) coupled to a corresponding one of the upper and lower

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chamber units; and a securing plate (28) for securing a corresponding one of the first and second substrates (see Figure 1). The reference is silent as to the presence of elastic members.

Norton discloses a pressing apparatus comprising a platen (16) and a face piece (19). The face piece comprises a surface that contacts the material worked upon. Norton also discloses placing springs (20) between the platen and face piece. The placement of the springs allows a compressive force to be applied to the material worked upon by the face piece while the platen is moved away from the material worked upon. The compressive force prevents the material worked upon from deforming (column 4, lines 62-75).

It would have been obvious for one of ordinary skill in the art at the time of invention to modify the apparatus of Satoshi to include springs as taught by Norton between the adjacent plates pressings on the worked material in order to prevent the worked material from deforming.

As to claim 2, Satoshi et al. discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein the upper and lower chamber units are capable of being convexly bendable (paragraph 0019). Applicant should note that although neither reference explicitly states that the elastic members (108) exert restoration forces on the upper and lower chamber units, the nature of elasticity would have lead one of ordinary skill in the art to understand that elastic members placed between an upper stage and an upper chamber unit and a lower stage and an lower

chamber unit respectively, would have been capable of exerting restoration forces to the upper and lower chamber units.

As to claim 3, Norton discloses a substrate bonding apparatus capable of manufacturing a liquid crystal display device wherein the plurality of elastic members include a coil spring (see Figure).

As to claims 4 and 5, examiner acknowledges that there is not explicit disclosure of conical or plate springs. However, examiner asserts the use of all three springs is well known. Absent any unexpected results specific to the instant invention one of ordinary skill in the art would have readily recognized to use an initially shaped-conical spring or a plate spring in place of a coil spring.

As to claim 14, Satoshi discloses the securing plate includes a plurality of electrostatic chucks (paragraph 0021).

As to claim 15, one of ordinary skill in the art at the time of invention would have been motivated to place the elastic members in correspondence with the plurality of electrostatic chucks such that the substrate is held in a parallel manner to a second substrate during the chucking process.

4. Claims 16-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi and Norton and further in view of Kubota et al. (of record, previously cited).

Satoshi as modified discloses a bonding apparatus. The applicant is referred to paragraph 3 above for a detailed discussion of Satoshi as modified. Satoshi is silent as to the securing plate material. Kubota discloses a securing plate capable of being used in a bonding apparatus for a LCD screen (column 1, lines 11-13), and further discloses

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that said securing plate could be made of stainless steel or aluminum (column 4, lines 56-60). Using steel or aluminum is advantageous because, as disclosed by Kubota et al., doing so, adds to the strength of the securing plate (column 4, lines 55-56).

Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to use a securing plate made of stainless steel or aluminum as taught by Kubota et al. above in the bonding apparatus of Satoshi. As to claim 18, although the reference is silent as to an exact thickness for the securing plate, Kubota et al. does disclose that it is advantageous to use a securing plate that has a high thickness to ensure good mechanical strength and proper handling (column 4, lines 49-56). As such, one of ordinary skill in the art would have understood to use a securing plate with a thickness of at least 40mm to ensure good strength and proper handling of the substrate.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al (of record, previously cited) in view of Norton (newly cited) and Matsushita [JP11-264991A] (of record, newly cited).

Satoshi as modified discloses a bonding apparatus. The applicant is referred to paragraph 3 above for a detailed discussion of Satoshi as modified. Satoshi does not disclose the securing plate having a plurality of holes.

Matsushita discloses a bonding apparatus comprising a surface plate (9) having suction holes therein for applying suction to a substrate. One of ordinary skill in the art at the time of invention would have readily recognized suction as a viable method of securing a substrate to the securing plate. It would have been obvious to one of

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ordinary skill in the art at the time of invention to modify the securing plate of Satoshi by including a plurality of holes as taught by Matsushita in order to apply a suction force to a substrate.

Response to Arguments

6. Applicant's arguments with respect to claims 1-5, 14-18 and 23 have been considered but are moot in view of the new ground(s) of rejection. Applicant amended claim 1 by broadening the claim to only require at least one of a first and second elastic member, and by including the limitations of claims 8 and 11. The amended claim is rejected in view of newly cited Norton [US2874751]. Norton teaches applying elastic members between the platen and the plate that is in contact with the material being worked upon. Norton provides motivation to include the elastic members between the platen and plate by reciting that elastic members will keep the material worked upon in compression so that the material does not deform.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel McNally whose telephone number is (571) 272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel McNally
Examiner
Art Unit 1733



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300

/DPM/
August 3, 2007